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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/700,047	11/04/2003	Harumi Nishiguchi	402859/AOYAMA	3129

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EXAMINER	
ROSE, KIESHA L	

ART UNIT	PAPER NUMBER
2822	

DATE MAILED: 05/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/700,047	NISHIGUCHI ET AL.	
	Examiner	Art Unit	
	Kiesha L. Rose	2822	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 February 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This Office Action is in response to the amendment filed 21 February 2006.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-3 and 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murayama in view of Shima et al. (U.S. Patent 5,420,066).

Murayama discloses a semiconductor laser (Fig. 1b) that contains an active layer (20), a lower cladding layer (18) located on a first side of active layer, a first upper cladding layer (22) located on a second side of active layer the second side being opposite the first side of active layer, an etch stopper layer (24) located at first upper cladding layer on second side of active layer, a second upper cladding layer (26) located opposite etching stopper layer on the second side of active layer and including a stripe protrusion in which a stripe light-guiding channel (30) is formed between the protrusion and etching stopper layer wherein the etching stopper layer is a single layer of a material different (InGaP) from materials of each of lower, first upper and second upper cladding layers. Where the active layer contains GaInP and each of the lower, first upper and second upper cladding layers contain AlGaInP. Murayama discloses all

the limitations except for the etching stopper layer to be formed of AlGaAs. Whereas Shima discloses a semiconductor layer (Fig. 1) that contains a lower cladding layer (2), an active layer (3), an upper cladding layer (4), an AlGaAs etching stopper layer (5a) and a second upper cladding layer (6). The etch stop layer is formed of $Al_xGa_{1-x}As$ where x is at least 0.45,0.7 or 0.9. (Column 5, lines 32-33, Column 1, lines 44-45) and has a refractive index within a range of +/- 5% to refractive index of each of the lower, first upper and second upper cladding layer. The etching stopper layer is formed of AlGaAs because this material is a better etch stop layers. (Column 6, lines 44-47) Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Murayama by incorporating the etching stopper layer to comprise AlGaAs because this material is a better etch stop as taught by Shima.

Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murayama in view of Shima.

Murayama discloses a semiconductor laser (Fig. 1b) that contains an active layer (20), a lower cladding layer (18) located on a first side of active layer, a first upper cladding layer (22) located on a second side of active layer on the first side of active layer, a second upper cladding layer (26) located at first upper cladding layer on the second side of active layer and including a stripe protrusion in which a stripe light-guiding channel (30) is formed between the protrusion and second upper cladding layer. Where the active layer contains GaInP and each of the lower and first upper cladding layers contain AlGaInP. Murayama discloses all the limitations except for the second

cladding layer to contain AlGaAs. Whereas Shima discloses a semiconductor layer (Fig. 1) that contains a lower cladding layer (2), an active layer (3), an upper cladding layer (4) and an AlGaAs second upper cladding layer (6). The second upper cladding layer is formed of $Al_xGa_{1-x}As$ where x is at least 0.45. (Column 5, lines 34-36) wherein the second cladding layer is a material different from materials of the first upper cladding layers and has a refractive index within a range of +/- 5% to refractive index of the first upper cladding layer. The second upper cladding layer are formed of AlGaAs because this material is a better etch stop layers. (Column 6, lines 44-47) Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Murayama by incorporating the second upper cladding layer to comprise AlGaAs because this material is a better etch stop as taught by Shima.

Response to Arguments

Applicant's arguments filed 21 February 2006 have been fully considered but they are not persuasive. Applicant's argue that the etch stop layer of Murayama does not include a different chemical composition then the cladding layers since it does include the materials that are in the cladding layers. This is erroneous since the cladding layers include InGaAlP and the etch stop layer contains InGaP, even though the etch stop does contain **some** of the same materials as the cladding layer it does have a different chemical composition then the cladding layers since it does not include Al. Therefore the rejection stands.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kiesha L. Rose whose telephone number is 571-272-1844. The examiner can normally be reached on M-F 8:30-6:00 off 2nd Mondays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amir Zarabian can be reached on 571-272-1852. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KLR

Zandra V. Smith
Supervisory Patent Examiner
May 12, 2006